



Haleakalā NP - Landbirds Update

Haleakalā National Park (HALE) is famous for stunning sunrises over the immense volcanic basin, the rare and picturesque silversword, and for the dramatic waterfalls and pools of ‘Ohe‘o gulch.

Amazingly, there is still a place in HALE that is seldom seen. That place is Kīpahulu Valley, a legendary forest that harbors Maui’s rare and unique Hawaiian honeycreepers. The valley is a natural fortress; walled in by dense rainforest, sheer cliffs, and huge waterfalls. It rains nearly every day.

The Inventory & Monitoring landbird team conducted a survey to provide data for monitoring long-term trends in bird distribution, density, and abundance in Kīpahulu Valley. The team conducted point-count surveys at 162 stations on 11 transects in a 3,120 hectare area. Every bird seen and heard during the 8-minute counts was recorded within both native rainforest and non-native lowland forest.

Some of the honeycreepers in the valley are notoriously cryptic. For instance, the endangered Maui nukupu‘u and Maui ‘ākepa have been observed less than 10 times in the last 100 years.

A total of **2,830** individual birds of **6 native** and **6 non-native** species were recorded during the survey. The ‘apapane was the most abundant and widely distributed species documented. The team detected 849 individuals at 93% of the stations. Generalist foragers, ‘apapane thrive in ‘ōhi‘a rainforests where they can feed on nectar and

search for small insects.

Maui ‘amakihi and ‘i‘iwi were similarly abundant and widespread in Kīpahulu Valley. ‘Amakihi have fared well on most of the Hawaiian Islands because of their generalist diet and resistance to the deadly avian malaria parasite. In contrast, ‘i‘iwi are very vulnerable to the disease and generally only occur in elevations above 4,500 feet where mosquitoes are cold temperature intolerant. Curiously, ‘i‘iwi were detected at elevations as low as 3,200 feet in Kīpahulu Valley; well below the known ranges on Kaua‘i and Hawai‘i Islands (‘i‘iwi are extinct on Moloka‘i and O‘ahu). What could account for this specie’s occurrence at low elevations? One speculation is that the strong and cool trade winds that blast the valley suppress populations of mosquitoes that transmit the parasite.

The Maui ‘alauahio, or Maui creeper, is relatively common in Kīpahulu Valley. The team detected 142 individuals at 35% of the stations sampled. ‘Alauahio are conspicuous because they forage in small groups and actively “chip” to each other. They are also curious and often approach observers in the field. ‘Alauahio occupy a unique niche in native rainforests. Their short and straight bills are perfect for searching for insects under leaves and in the bark of trees and shrubs. They are often seen “creeping” along branches and trunks in search of food.

In contrast to the small and cute disposition of the ‘alauahio, the ‘ākohekohe, or crested

honeycreeper, has a haunting presence. They are the largest of the honeycreepers and their feathers are predominantly black, with speckles of orange and yellow. Adults have a large mohawk-like crest on their heads. They look and act like the chiefs of the forest as they aggressively defend food and nesting resources. The team only detected 20 individuals in HALE, which appears to be a significant reduction from previous surveys. Habitat degradation, introduced predators, and the prevalence of avian malaria has drastically reduced the range of this endangered species. Previous estimates for ‘ākohekohe hover near 3,800 individuals on all of Maui. The estimate may need to be adjusted to mark an unfortunate decline of this spectacular honeycreeper.

The endangered kiwikiu, or Maui parrotbill, is undoubtedly one of the most striking and unusual honeycreepers on Maui. This species uses its large hooked bill to tear, rip, dig, and crush the bark and branches of native trees and shrubs in search of insects and their larvae. Island wide estimates hover near 500 individuals, making it one of the rarest species in Hawai‘i. Only 8 individuals were detected in the 2012 survey which was unfortunate, but not surprising. Recovery of this species is slow due to its low reproductive rate. Adults lay only one egg per year and juveniles stay with their parents for up to 8 months. Kiwikiu also require relatively large home ranges to search for prey. These birds can

suffer if even a small portion of their range is severed or degraded, which emphasizes the importance of habitat protection for this species.

There was a strong representation of non-native forest birds in even the most pristine native forests. The Japanese white-eye, Japanese bush-warbler, and the red-billed leiothrix accounted for nearly half of all non-native bird detections. They are also broadly distributed throughout weedy low elevation forests where they can disperse seeds such as the invasive Koster’s curse. Native birds are conspicuously absent from low elevation weedy forests, likely due to avian malaria and because most native birds adhere to strict foraging, nesting, and behavioral requirements only offered by native habitats.

Kīpahulu Valley and portions of northeastern Haleakalā Volcano are the best examples of pristine native rainforest on east Maui. It is perplexing why several species of Hawaiian honeycreepers are so incredibly rare even in these forests. The devastating effects of avian disease and habitat degradation in low elevation forests are apparent, but why are some native species scarce even in undisturbed areas? The extinction of the po‘ouli (the last individual died in captivity in 2004) provides a grim reminder of the fragility of Hawaiian ecosystems, where a species may rely on very specific resources such as endemic invertebrates. Even subtle changes can sometimes have dramatic impacts on forest bird communities. Without regular monitoring, detrimental processes and population declines may escape notice.

Nonetheless, many natural wonders appear to be safe in the fortress of Kīpahulu Valley. Species like the enigmatic Maui ‘ākepa and Maui nukupu‘u escaped our notice this time. Whether they are one of the valley’s hidden treasures, or lost to time, has yet to be determined.

—S. Judge, Wildlife Biologist
Hawaii-Pacific Islands
Cooperative Ecosystem Studies Unit

BIRDS DETECTED

‘Ākohekohe
(*Palmeria dolei*) 20

‘I‘iwi
(*Vestiaria coccinea*) 399

Maui ‘alauahio
(*Paroreomyza montana*) 142

‘Apapane
(*Himatione sanguinea*) 849

Maui ‘amakihi
(*Hemignathus virens wilsoni*) 334

Kiwikiu
(*Pseudonestor xanthophrys*) 8

Melodious laughing thrush
(*Garrulax canorus*) 17

Northern cardinal
(*Cardinalis cardinalis*) 3

Red-billed leiothrix
(*Leiothrix lutea*) 346

House finch
(*Carpodacus mexicanus*) 1

Japanese bush-warbler
(*Cettia diphone*) 354

Japanese white-eye
(*Zosterops japonicus*) 357



‘Ākohekohe, ‘alauahio, and kiwikiu photos by J. Jeffrey